

SEQUENCE LISTING

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<120> CYSTINE KNOT GROWTH FACTOR MUTANTS

<130> UOFMD.003C1

<150> PCT/US99/05908

<151> 1999-03-19

<150> PCT/US98/19772

<151> 1998-09-22

<160> 41

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 93

<212> PRT

<213> HOMO SAPIEN

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Pro	Phe	Phe	Ser	Gln	Pro	Gly	Ala	Pro	Ile	Leu	Gln	Cys	Met	Gly	Cys
			20					25					30		
Cys	Phe	Ser	Arg	Ala	Tyr	Pro	Thr	Pro	Leu	Arg	Ser	Lys	Lys	Thr	Met
		35					40					45			
Leu	Val	Gln	Lys	Asn	Val	Thr	Ser	Glu	Ser	Thr	Cys	Cys	Val	Ala	Lys
	50					55					60				
Ser	Tyr	Asn	Arg	Val	Thr	Val	Met	Gly	Gly	Phe	Lys	Val	Glu	Asn	His
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Thr	Ala	Cys	His	Cys	Ser	Thr	Cys	Tyr	Tyr	His	Lys	Ser			
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<211> 119

<212> PRT

<213> HOMO SAPIEN

<400> 2

Pro	Phe	Cys	Ile	Pro	Thr	Glu	Tyr	Thr	Met	His	Ile	Glu	Arg	Arg	Glu
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Cys	Ala	Tyr	Cys	Leu	Thr	Ile	Asn	Thr	Thr	Ile	Cys	Ala	Gly	Tyr	Cys
			20					25					30		
Met	Thr	Arg	Asp	Ile	Asn	Gly	Lys	Leu	Phe	Leu	Pro	Lys	Tyr	Ala	Leu
		35					40					45			
Ser	Gln	Asp	Val	Cys	Thr	Tyr	Arg	Asp	Phe	Ile	Tyr	Arg	Thr	Val	Glu
	50					55					60				
Ile	Pro	Gly	Cys	Pro	Leu	His	Val	Ala	Pro	Tyr	Phe	Ser	Tyr	Pro	Val

65		70		75		80									
Ala	Leu	Ser	Cys	Lys	Cys	Gly	Lys	Cys	Asn	Thr	Asp	Tyr	Ser	Asp	Cys
		85		90		95									
Ile	His	Glu	Ala	Ile	Lys	Thr	Asn	Tyr	Cys	Thr	Lys	Pro	Gln	Lys	Ser
		100		105		110									
Tyr	Leu	Val	Gly	Phe	Ser	Val									
		115													

<210> 3
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<400> 3
Pro Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile Asn Ala Thr
1 5 10 15
Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr
20 25 30
Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val Leu Gln Gly
35 40 45
Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg Asp Val Arg
50 55 60
Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val
65 70 75 80
Val Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu Cys Arg Arg
85 90 95
Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu Thr Cys Asp
100 105 110
Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro Pro Pro Ser
115 120 125
Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr
130 135 140

<210> 4
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 <212> PRT
 <213> HOMO SAPIEN

<400> 4
Pro Ser Arg Glu Pro Leu Arg Pro Trp Cys His Pro Ile Asn Ala Ile
1 5 10 15
Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr
20 25 30
Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Met Arg Val Leu Gln Ala
35 40 45
Val Leu Pro Pro Leu Pro Gln Val Val Cys Thr Tyr Arg Asp Val Arg
50 55 60
Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asp Pro Val
65 70 75 80
Val Ser Phe Pro Val Ala Leu Ser Cys Arg Cys Gly Pro Cys Arg Arg
85 90 95
Ser Thr Ser Asp Cys Gly Gly Pro Lys Asp His Pro Leu Thr Cys Asp
100 105 110
His Pro Gln Leu Ser Gly Leu Leu Phe Leu
115 120

<210> 5
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 <212> PRT
 <213> HOMO SAPIEN

<400> 5
 Pro Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys Glu
 1 5 10 15
 Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly Tyr
 20 25 30
 Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys Ile
 35 40 45
 Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg Val Pro Gly
 50 55 60
 Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val Ala Thr Gln
 65 70 75 80
 Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys Thr Val Arg
 85 90 95
 Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys Glu
 100 105 110

<210> 6
 <211> 126
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 <213> HOMO SAPIEN

<400> 6
 Pro Ser Ile Glu Glu Ala Val Pro Ala Val Cys Lys Thr Arg Thr Val
 1 5 10 15
 Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro Thr Ser Ala Asn Phe
 20 25 30
 Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg Cys Thr Gly Cys Cys
 35 40 45
 Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg Val His His Arg Ser
 50 55 60
 Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys Lys Pro Lys Leu Lys
 65 70 75 80
 Glu Val Gln Val Arg Leu Glu Glu His Leu Glu Cys Ala Cys Ala Thr
 85 90 95
 Thr Ser Leu Asn Pro Asp Tyr Arg Glu Glu Asp Thr Gly Arg Pro Arg
 100 105 110
 Glu Ser Gly Lys Lys Arg Lys Arg Lys Arg Leu Lys Pro Thr
 115 120 125

<210> 7
 <211> 161
 <212> PRT
 <213> HOMO SAPIEN

<400> 7
 Pro Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala Glu
 1 5 10 15
 Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile Asp

<400> 9

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Pro Ser Ser Ser His Pro Ile Phe His Arg Gly Glu Phe Ser Val Cys
 1          5          10          15
Asp Ser Val Ser Val Trp Val Gly Asp Lys Thr Thr Ala Thr Asp Ile
          20          25          30
Lys Gly Lys Glu Val Met Val Leu Gly Glu Val Asn Asn Ile Asn Ser
          35          40          45
Val Phe Lys Gln Tyr Phe Phe Glu Thr Lys Cys Arg Asp Pro Asn Pro
          50          55          60
Val Asp Ser Gly Cys Arg Gly Ile Asp Ser Lys His Trp Asn Ser Tyr
65          70          75          80
Cys Thr Thr Thr His Thr Phe Val Lys Ala Met Leu Thr Asp Gly Lys
          85          90          95
Gln Ala Ala Trp Arg Phe Ile Arg Ile Asp Thr Ala Cys Val Cys Val
          100          105          110
Leu Ser Arg Lys Ala Val Arg Arg Ala
          115          120
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<210> 10

<211> 120

<212> PRT

<213> HOMO SAPIEN

<400> 10

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Pro His Ser Asp Pro Ala Arg Arg Gly Glu Leu Ser Val Cys Asp Ser
 1          5          10          15
Ile Ser Glu Trp Val Thr Ala Ala Asp Lys Lys Thr Ala Val Asp Met
          20          25          30
Ser Gly Gly Thr Val Thr Val Leu Glu Lys Val Ser Pro Val Lys Gly
          35          40          45
Gln Leu Lys Gln Tyr Phe Tyr Glu Thr Lys Cys Asn Pro Met Gly Tyr
          50          55          60
Thr Lys Glu Gly Cys Arg Gly Ile Asp Lys Arg His Trp Asn Ser Gln
65          70          75          80
Cys Arg Thr Thr Gln Ser Tyr Val Arg Ala Met Leu Thr Asp Ser Lys
          85          90          95
Lys Arg Ile Gly Trp Arg Phe Ile Arg Ile Asp Thr Ser Cys Val Cys
          100          105          110
Ile Leu Thr Ile Lys Arg Gly Arg
          115          120
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<210> 11

<211> 120

<212> PRT

<213> HOMO SAPIEN

<400> 11

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Pro Tyr Ala Glu His Lys Ser His Arg Gly Glu Tyr Ser Val Cys Asp
 1          5          10          15
Ser Glu Ser Leu Trp Val Thr Asp Lys Ser Ser Ala Ile Asp Ile Arg
          20          25          30
Gly His Gln Val Thr Val Leu Gly Glu Ile Gly Lys Thr Asn Ser Pro
          35          40          45
Val Lys Gln Tyr Phe Tyr Glu Thr Arg Cys Lys Glu Ala Arg Pro Val
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50		55		60
Lys Asn Gly Cys Arg Gly Ile Asp Asp Arg His Trp Asn Ser Gln Cys				
65	70	75	80	
Lys Thr Ser Gln Thr Tyr Val Arg Ala Ser Leu Thr Glu Asn Asn Lys				
	85	90	95	
Leu Val Gly Trp Arg Trp Ile Arg Ile Asp Thr Ser Cys Val Cys Ala				
	100	105	110	
Leu Ser Arg Lys Ile Gly Arg Thr				
115	120			

<210> 12
 <211> 131
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 <213> HOMO SAPIEN

<400> 12
Pro Gly Val Ser Glu Thr Ala Pro Ala Ser Arg Arg Gly Glu Leu Ala
1 5 10 15
Val Cys Asp Ala Val Ser Gly Trp Val Thr Asp Arg Arg Thr Ala Val
20 25 30
Asp Leu Arg Gly Arg Glu Val Glu Val Leu Gly Glu Val Pro Ala Ala
35 40 45
Gly Gly Ser Pro Leu Arg Gln Tyr Phe Phe Glu Thr Arg Cys Lys Ala
50 55 60
Asp Asn Ala Glu Glu Gly Gly Pro Gly Ala Gly Gly Gly Cys Arg
65 70 75 80
Gly Val Asp Arg Arg His Trp Val Ser Glu Cys Lys Ala Lys Gln Ser
85 90 95
Tyr Val Arg Ala Leu Thr Ala Asp Ala Gln Gly Arg Val Gly Trp Arg
100 105 110
Trp Ile Arg Ile Asp Thr Ala Cys Val Cys Thr Leu Leu Ser Arg Thr
115 120 125
Gly Arg Ala
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<210> 13
 <211> 113
 <212> PRT
 <213> HOMO SAPIEN

<400> 13
Pro Ala Leu Asp Thr Asn Tyr Cys Phe Ser Ser Thr Glu Lys Asn Cys
1 5 10 15
Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg Lys Asp Leu Gly Trp Lys
20 25 30
Trp Ile His Glu Pro Lys Gly Tyr His Ala Asn Phe Cys Leu Gly Pro
35 40 45
Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln Tyr Ser Lys Val Leu Ala
50 55 60
Leu Tyr Asn Gln His Asn Pro Gly Ala Ser Ala Ala Pro Cys Cys Val
65 70 75 80
Pro Gln Ala Leu Glu Pro Leu Pro Ile Val Tyr Tyr Val Gly Arg Lys
85 90 95
Pro Lys Val Glu Gln Leu Ser Asn Met Ile Val Arg Ser Cys Lys Cys
100 105 110

Ser

<210> 14
<211> 113
<212> PRT
<213> HOMO SAPIEN

<400> 14
Pro Ala Leu Asp Ala Ala Tyr Cys Phe Arg Asn Val Gln Asp Asn Cys
1 5 10 15
Cys Leu Arg Pro Leu Tyr Ile Asp Phe Lys Arg Asp Leu Gly Trp Lys
20 25 30
Trp Ile His Glu Pro Lys Gly Tyr Asn Ala Asn Phe Cys Ala Gly Ala
35 40 45
Cys Pro Tyr Leu Trp Ser Ser Asp Thr Gln His Ser Arg Val Leu Ser
50 55 60
Leu Tyr Asn Thr Ile Asn Pro Glu Ala Ser Ala Ser Pro Cys Cys Val
65 70 75 80
Ser Gln Asp Leu Glu Pro Leu Thr Ile Leu Tyr Tyr Ile Gly Lys Thr
85 90 95
Pro Lys Ile Glu Gln Leu Ser Asn Met Ile Val Lys Ser Cys Lys Cys
100 105 110

Ser

<210> 15
<211> 113
<212> PRT
<213> HOMO SAPIEN

<400> 15
Pro Ala Leu Asp Thr Asn Tyr Cys Phe Arg Asn Leu Glu Glu Asn Cys
1 5 10 15
Cys Val Arg Pro Leu Tyr Ile Asp Phe Arg Gln Asp Leu Gly Trp Lys
20 25 30
Trp Val His Glu Pro Lys Gly Tyr Tyr Ala Asn Phe Cys Ser Gly Pro
35 40 45
Cys Pro Tyr Leu Arg Ser Ala Asp Thr Thr His Ser Thr Val Leu Gly
50 55 60
Leu Tyr Asn Thr Leu Asn Pro Glu Ala Ser Ala Ser Pro Cys Cys Val
65 70 75 80
Pro Gln Asp Leu Glu Pro Leu Thr Ile Leu Tyr Tyr Val Gly Arg Thr
85 90 95
Pro Lys Val Glu Gln Leu Ser Asn Met Val Val Lys Ser Cys Lys Cys
100 105 110

Ser

<210> 16
<211> 371
<212> PRT
<213> HOMO SAPIEN

<400> 16

Pro Met Trp Pro Leu Trp Leu Cys Trp Ala Leu Trp Val Leu Pro Leu
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Ala Gly Pro Gly Ala Ala Leu Thr Glu Glu Gln Leu Leu Ala Ser Leu
20 25 30
Leu Arg Gln Leu Gln Leu Ser Glu Val Pro Val Leu Asp Arg Ala Asp
35 40 45
Met Glu Lys Leu Val Ile Pro Ala His Val Arg Ala Gln Tyr Val Val
50 55 60
Leu Leu Arg Arg Asp Gly Asp Arg Ser Arg Gly Lys Arg Phe Ser Gln
65 70 75 80
Ser Phe Arg Glu Val Ala Gly Arg Phe Leu Ala Ser Glu Ala Ser Thr
85 90 95
His Leu Leu Val Phe Gly Met Glu Gln Arg Leu Pro Pro Asn Ser Glu
100 105 110
Leu Val Gln Ala Val Leu Arg Leu Phe Gln Glu Pro Val Pro Gln Gly
115 120 125
Ala Leu His Arg His Gly Arg Leu Ser Pro Ala Ala Pro Lys Ala Arg
130 135 140
Val Thr Val Glu Trp Leu Val Arg Asp Asp Gly Ser Asn Arg Thr Ser
145 150 155 160
Leu Ile Asp Ser Arg Leu Val Ser Val His Glu Ser Gly Trp Lys Ala
165 170 175
Phe Asp Val Thr Glu Ala Val Asn Phe Trp Gln Gln Leu Ser Arg Pro
180 185 190
Pro Glu Pro Leu Leu Val Gln Val Ser Val Gln Arg Glu His Leu Gly
195 200 205
Pro Leu Ala Ser Gly Ala His Lys Leu Val Arg Phe Ala Ser Gln Gly
210 215 220
Ala Pro Ala Gly Leu Gly Glu Pro Gln Leu Glu Leu His Thr Leu Asp
225 230 235 240
Leu Arg Asp Tyr Gly Ala Gln Gly Asp Cys Asp Pro Glu Ala Pro Met
245 250 255
Thr Glu Gly Thr Arg Cys Cys Arg Gln Glu Met Tyr Ile Asp Leu Gln
260 265 270
Gly Met Lys Trp Ala Lys Asn Trp Val Leu Glu Pro Pro Gly Phe Leu
275 280 285
Ala Tyr Glu Cys Val Gly Thr Cys Gln Gln Pro Pro Glu Ala Leu Ala
290 295 300
Phe Asn Trp Pro Phe Leu Gly Pro Arg Gln Cys Ile Ala Ser Glu Thr
305 310 315 320
Ala Ser Leu Pro Met Ile Val Ser Ile Lys Glu Gly Gly Arg Thr Arg
325 330 335
Pro Gln Val Val Ser Leu Pro Asn Met Arg Val Gln Lys Cys Ser Cys
340 345 350
Ala Ser Asp Gly Ala Leu Val Pro Arg Arg Leu Gln His Arg Pro Trp
355 360 365
Cys Ile His
370

<210> 17

<211> 198

<212> PRT

<213> HOMO SAPIEN

<400> 17

Pro	Met	Gln	Arg	Trp	Lys	Ala	Ala	Ala	Leu	Ala	Ser	Val	Leu	Cys	Ser
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Ser	Val	Leu	Ser	Ile	Trp	Met	Cys	Arg	Glu	Gly	Leu	Leu	Leu	Ser	His
			20					25					30		
Arg	Leu	Gly	Pro	Ala	Leu	Val	Pro	Leu	His	Arg	Leu	Pro	Arg	Thr	Leu
		35					40					45			
Asp	Ala	Arg	Ile	Ala	Arg	Leu	Ala	Gln	Tyr	Arg	Ala	Leu	Leu	Gln	Gly
	50					55					60				
Ala	Pro	Asp	Ala	Met	Glu	Leu	Arg	Glu	Leu	Thr	Pro	Trp	Ala	Gly	Arg
65					70					75					80
Pro	Pro	Gly	Pro	Arg	Arg	Arg	Ala	Gly	Pro	Arg	Arg	Arg	Arg	Ala	Arg
				85					90					95	
Ala	Arg	Leu	Gly	Ala	Arg	Pro	Cys	Gly	Leu	Arg	Glu	Leu	Glu	Val	Arg
			100					105					110		
Val	Ser	Glu	Leu	Gly	Leu	Gly	Tyr	Ala	Ser	Asp	Glu	Thr	Val	Leu	Phe
		115					120					125			
Arg	Tyr	Cys	Ala	Gly	Ala	Cys	Glu	Ala	Ala	Ala	Arg	Val	Tyr	Asp	Leu
	130					135					140				
Gly	Leu	Arg	Arg	Leu	Arg	Gln	Arg	Arg	Arg	Leu	Arg	Arg	Glu	Arg	Val
145					150					155					160
Arg	Ala	Gln	Pro	Cys	Cys	Arg	Pro	Thr	Ala	Tyr	Glu	Asp	Glu	Val	Ser
				165					170					175	
Phe	Leu	Asp	Ala	His	Ser	Arg	Tyr	His	Thr	Val	His	Glu	Leu	Ser	Ala
			180					185						190	
Arg	Glu	Cys	Ala	Cys	Val										
		195													

<210> 18
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 <212> PRT
 <213> HOMO SAPIEN

Pro	Met	Val	Leu	His	Leu	Leu	Leu	Phe	Leu	Leu	Leu	Thr	Pro	Gln	Gly
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Gly	His	Ser	Cys	Gln	Gly	Leu	Glu	Leu	Ala	Arg	Glu	Leu	Val	Leu	Ala
			20					25					30		
Lys	Val	Arg	Ala	Leu	Phe	Leu	Asp	Ala	Leu	Gly	Pro	Pro	Ala	Val	Thr
		35					40					45			
Arg	Glu	Gly	Gly	Asp	Pro	Gly	Val	Arg	Arg	Leu	Pro	Arg	Arg	His	Ala
	50					55					60				
Leu	Gly	Gly	Phe	Thr	His	Arg	Gly	Ser	Glu	Pro	Glu	Glu	Glu	Glu	Asp
65					70				75						80
Val	Ser	Gln	Ala	Ile	Leu	Phe	Pro	Ala	Thr	Asp	Ala	Ser	Cys	Glu	Asp
			85					90					95		
Lys	Ser	Ala	Ala	Arg	Gly	Leu	Ala	Gln	Glu	Ala	Glu	Glu	Gly	Leu	Phe
		100						105					110		
Arg	Tyr	Met	Phe	Arg	Pro	Ser	Gln	His	Thr	Arg	Ser	Arg	Gln	Val	Thr
	115						120					125			
Ser	Ala	Gln	Leu	Trp	Phe	His	Thr	Gly	Leu	Asp	Arg	Gln	Gly	Thr	Ala
	130					135					140				
Ala	Ser	Asn	Ser	Ser	Glu	Pro	Leu	Leu	Gly	Leu	Leu	Ala	Leu	Ser	Pro
145					150				155						160
Gly	Gly	Pro	Val	Ala	Val	Pro	Met	Ser	Leu	Gly	His	Ala	Pro	Pro	His
				165					170					175	
Trp	Ala	Val	Leu	His	Leu	Ala	Thr	Ser	Ala	Leu	Ser	Leu	Leu	Thr	His

Glu	Lys	Val	Val	Asp	Ala	Arg	Lys	Ser	Thr	Trp	His	Val	Phe	Pro	Val
210						215					220				
Ser	Ser	Ser	Ile	Gln	Arg	Leu	Leu	Asp	Gln	Gly	Lys	Ser	Ser	Leu	Asp
225					230					235					240
Val	Arg	Ile	Ala	Cys	Glu	Gln	Cys	Gln	Glu	Ser	Gly	Ala	Ser	Leu	Val
				245					250					255	
Leu	Leu	Gly	Lys	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Gly	Glu	Gly	Lys	Lys
			260					265					270		
Lys	Gly	Gly	Gly	Glu	Gly	Gly	Ala	Gly	Ala	Asp	Glu	Glu	Lys	Glu	Gln
		275					280					285			
Ser	His	Arg	Pro	Phe	Leu	Met	Leu	Gln	Ala	Arg	Gln	Ser	Glu	Asp	His
	290					295					300				
Pro	His	Arg	Arg	Arg	Arg	Arg	Gly	Leu	Glu	Cys	Asp	Gly	Lys	Val	Asn
305					310					315					320
Ile	Cys	Cys	Lys	Lys	Gln	Phe	Phe	Val	Ser	Phe	Lys	Asp	Ile	Gly	Trp
				325					330					335	
Asn	Asp	Trp	Ile	Ile	Ala	Pro	Ser	Gly	Tyr	His	Ala	Asn	Tyr	Cys	Glu
		340						345					350		
Gly	Glu	Cys	Pro	Ser	His	Ile	Ala	Gly	Thr	Ser	Gly	Ser	Ser	Leu	Ser
		355					360					365			
Phe	His	Ser	Thr	Val	Ile	Asn	His	Tyr	Arg	Met	Arg	Gly	His	Ser	Pro
	370					375					380				
Phe	Ala	Asn	Leu	Lys	Ser	Cys	Cys	Val	Pro	Thr	Lys	Leu	Arg	Pro	Met
385					390					395					400
Ser	Met	Leu	Tyr	Tyr	Asp	Asp	Gly	Gln	Asn	Ile	Ile	Lys	Lys	Asp	Ile
				405				410						415	
Gln	Asn	Met	Ile	Val	Glu	Glu	Cys	Gly	Cys	Ser					
			420					425							

<210> 20
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 <212> PRT
 <213> HOMO SAPIEN

<400> 20

Pro	Met	Asp	Gly	Leu	Pro	Gly	Arg	Ala	Leu	Gly	Ala	Ala	Cys	Leu	Leu
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Leu	Leu	Ala	Ala	Gly	Trp	Leu	Gly	Pro	Glu	Ala	Trp	Gly	Ser	Pro	Thr
		20						25					30		
Pro	Pro	Pro	Thr	Pro	Ala	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Gly	Ser
		35					40					45			
Pro	Gly	Gly	Ser	Gln	Asp	Thr	Cys	Thr	Ser	Cys	Gly	Gly	Phe	Arg	Arg
	50				55					60					
Pro	Glu	Glu	Leu	Gly	Arg	Val	Asp	Gly	Asp	Phe	Leu	Glu	Ala	Val	Lys
65					70				75						80
Arg	His	Ile	Leu	Ser	Arg	Leu	Gln	Met	Arg	Gly	Arg	Pro	Asn	Ile	Thr
			85					90						95	
His	Ala	Val	Pro	Lys	Ala	Ala	Met	Val	Thr	Ala	Leu	Arg	Lys	Leu	His
		100					105						110		
Ala	Gly	Lys	Val	Arg	Glu	Asp	Gly	Arg	Val	Glu	Ile	Pro	His	Leu	Asp
		115					120					125			
Gly	His	Ala	Ser	Pro	Gly	Ala	Asp	Gly	Gln	Glu	Arg	Val	Ser	Glu	Ile
	130					135					140				
Ile	Ser	Phe	Ala	Glu	Thr	Asp	Gly	Leu	Ala	Ser	Ser	Arg	Val	Arg	Leu
145				150					155						160
Tyr	Phe	Phe	Ile	Ser	Asn	Glu	Gly	Asn	Gln	Asn	Leu	Phe	Val	Val	Gln

Gly Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu
 145 150 155 160
 Lys Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu
 165 170 175
 Phe Gln Gln Gln Lys His Pro Gln Gly Ser Leu Asp Thr Gly Glu Glu
 180 185 190
 Ala Glu Glu Val Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser
 195 200 205
 Glu Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Val Phe Pro Val
 210 215 220
 Ser Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp
 225 230 235 240
 Val Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val
 245 250 255
 Leu Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys
 260 265 270
 Lys Gly Gly Gly Glu Gly Gly Ala Glu Ala Asp Glu Glu Lys Glu Gln
 275 280 285
 Ser His Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His
 290 295 300
 Pro His Arg Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn
 305 310 315 320
 Ile Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp
 325 330 335
 Asn Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu
 340 345 350
 Gly Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser
 355 360 365
 Phe His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro
 370 375 380
 Phe Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met
 385 390 395 400
 Ser Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile
 405 410 415
 Gln Asn Met Ile Val Glu Glu Cys Gly Cys Ser
 420 425

<210> 22
 <211> 408
 <212> PRT
 <213> HOMO SAPIEN

<400> 22
 Pro Met Asp Gly Leu Pro Gly Arg Ala Leu Gly Ala Ala Cys Leu Leu
 1 5 10 15
 Leu Leu Ala Ala Gly Trp Leu Gly Pro Glu Ala Trp Gly Ser Pro Thr
 20 25 30
 Pro Pro Pro Thr Pro Ala Ala Pro Pro Pro Pro Pro Gly Ser
 35 40 45
 Pro Gly Gly Ser Gln Asp Thr Cys Thr Ser Cys Gly Gly Phe Arg Arg
 50 55 60
 Pro Glu Glu Leu Gly Arg Val Asp Gly Asp Phe Leu Glu Ala Val Lys
 65 70 75 80
 Arg His Ile Leu Ser Arg Leu Gln Met Arg Gly Arg Pro Asn Ile Thr
 85 90 95
 His Ala Val Pro Lys Ala Ala Met Val Thr Ala Leu Arg Lys Leu His

100
 115
 130
 145
 160
 175
 190
 205
 220
 235
 250
 265
 280
 295
 310
 325
 340
 355
 370
 385
 405

Ala	Gly	Lys	Val	Arg	Glu	Asp	Gly	Arg	Val	Glu	Ile	Pro	His	Leu	Asp
Gly	His	Ala	Ser	Pro	Gly	Ala	Asp	Gly	Gln	Glu	Arg	Val	Ser	Glu	Ile
Ile	Ser	Phe	Ala	Glu	Thr	Asp	Gly	Leu	Ala	Ser	Ser	Arg	Val	Arg	Leu
Tyr	Phe	Phe	Ile	Ser	Asn	Glu	Gly	Asn	Gln	Asn	Leu	Phe	Val	Val	Gln
Ala	Ser	Leu	Trp	Leu	Tyr	Leu	Lys	Leu	Leu	Pro	Tyr	Val	Leu	Glu	Lys
Gly	Ser	Arg	Arg	Lys	Val	Arg	Val	Lys	Val	Tyr	Phe	Gln	Glu	Gln	Gly
His	Gly	Asp	Arg	Trp	Asn	Met	Val	Glu	Lys	Arg	Val	Asp	Leu	Lys	Arg
Ser	Gly	Trp	His	Thr	Phe	Pro	Leu	Thr	Glu	Ala	Ile	Gln	Ala	Leu	Phe
Glu	Arg	Gly	Glu	Arg	Leu	Asn	Leu	Asp	Val	Gln	Cys	Asp	Ser	Cys	
Gln	Glu	Leu	Ala	Val	Val	Pro	Val	Phe	Val	Asp	Pro	Gly	Glu	Glu	Ser
His	Arg	Pro	Phe	Val	Val	Val	Gln	Ala	Arg	Leu	Gly	Asp	Ser	Arg	His
Arg	Ile	Arg	Lys	Arg	Gly	Leu	Glu	Cys	Asp	Gly	Arg	Thr	Asn	Leu	Cys
Cys	Arg	Gln	Gln	Phe	Phe	Ile	Asp	Phe	Arg	Leu	Ile	Gly	Trp	Asn	Asp
Trp	Ile	Ile	Ala	Pro	Thr	Gly	Tyr	Tyr	Gly	Asn	Tyr	Cys	Glu	Gly	Ser
Cys	Pro	Ala	Tyr	Leu	Ala	Gly	Val	Pro	Gly	Ser	Ala	Ser	Ser	Phe	His
Thr	Ala	Val	Val	Asn	Gln	Tyr	Arg	Met	Arg	Gly	Leu	Asn	Pro	Gly	Thr
Val	Asn	Ser	Cys	Cys	Ile	Pro	Thr	Lys	Leu	Ser	Thr	Met	Ser	Met	Leu
Tyr	Phe	Asp	Asp	Glu	Tyr	Asn	Ile	Val	Lys	Arg	Asp	Val	Pro	Asn	Met
Ile	Val	Glu	Glu	Cys	Gly	Cys	Ala								

<210> 23
 <211> 561
 <212> PRT
 <213> HOMO SAPIEN

<400> 23
 Pro Met Arg Asp Leu Pro Leu Thr Ser Leu Ala Leu Val Leu Ser Ala
 1 5 10 15
 Leu Gly Ala Leu Leu Gly Thr Glu Ala Leu Arg Ala Glu Glu Pro Ala
 20 25 30
 Val Gly Thr Ser Gly Leu Ile Phe Arg Glu Asp Leu Asp Trp Pro Pro
 35 40 45
 Gly Ile Pro Gln Glu Pro Leu Cys Leu Val Ala Leu Gly Gly Asp Ser
 50 55 60
 Asn Gly Ser Ser Ser Pro Leu Arg Val Val Gly Ala Leu Ser Ala Tyr
 65 70 75 80

Glu	Gln	Ala	Phe	Leu	Gly	Ala	Val	Gln	Arg	Ala	Arg	Trp	Gly	Pro	Arg		
				85					90					95			
Asp	Leu	Ala	Thr	Phe	Gly	Val	Cys	Asn	Thr	Gly	Asp	Arg	Gln	Ala	Ala		
			100					105					110				
Leu	Pro	Ser	Leu	Arg	Arg	Leu	Gly	Ala	Trp	Leu	Arg	Asp	Pro	Gly	Gly		
		115					120					125					
Gln	Arg	Leu	Val	Val	Leu	His	Leu	Glu	Glu	Val	Thr	Trp	Glu	Pro	Thr		
	130					135					140						
Pro	Ser	Leu	Arg	Phe	Gln	Glu	Pro	Pro	Pro	Gly	Gly	Ala	Gly	Pro	Pro		
145					150					155					160		
Glu	Leu	Ala	Leu	Leu	Val	Leu	Tyr	Pro	Gly	Pro	Gly	Pro	Glu	Val	Thr		
			165						170					175			
Val	Thr	Arg	Ala	Gly	Leu	Pro	Gly	Ala	Gln	Ser	Leu	Cys	Pro	Ser	Arg		
		180					185						190				
Asp	Thr	Arg	Tyr	Leu	Val	Leu	Ala	Val	Asp	Arg	Pro	Ala	Gly	Ala	Trp		
	195						200					205					
Arg	Gly	Ser	Gly	Leu	Ala	Leu	Thr	Leu	Gln	Pro	Arg	Gly	Glu	Asp	Ser		
	210					215					220						
Arg	Leu	Ser	Thr	Ala	Arg	Leu	Gln	Ala	Leu	Leu	Phe	Gly	Asp	Asp	His		
225					230					235					240		
Arg	Cys	Phe	Thr	Arg	Met	Thr	Pro	Ala	Leu	Leu	Leu	Leu	Pro	Arg	Ser		
			245						250					255			
Glu	Pro	Ala	Pro	Leu	Pro	Ala	His	Gly	Gln	Leu	Asp	Thr	Val	Pro	Phe		
		260						265					270				
Pro	Pro	Pro	Arg	Pro	Ser	Ala	Glu	Leu	Glu	Glu	Ser	Pro	Pro	Ser	Ala		
		275					280					285					
Asp	Pro	Phe	Leu	Glu	Thr	Leu	Thr	Arg	Leu	Val	Arg	Ala	Leu	Arg	Val		
	290					295					300						
Pro	Pro	Ala	Arg	Ala	Ser	Ala	Pro	Arg	Leu	Ala	Leu	Asp	Pro	Asp	Ala		
305					310					315					320		
Leu	Ala	Gly	Phe	Pro	Gln	Gly	Leu	Val	Asn	Leu	Ser	Asp	Pro	Ala	Ala		
			325						330					335			
Leu	Glu	Arg	Leu	Leu	Asp	Gly	Glu	Glu	Pro	Leu	Leu	Leu	Leu	Leu	Arg		
		340						345					350				
Pro	Thr	Ala	Thr	Thr	Gly	Asp	Pro	Ala	Pro	Leu	His	Asp	Pro	Thr			
	355					360					365						
Ser	Ala	Pro	Trp	Ala	Thr	Ala	Leu	Ala	Arg	Arg	Val	Ala	Ala	Glu	Leu		
	370					375					380						
Gln	Ala	Ala	Ala	Ala	Glu	Leu	Arg	Ser	Leu	Pro	Gly	Leu	Pro	Pro	Ala		
385					390					395					400		
Thr	Ala	Pro	Leu	Leu	Ala	Arg	Leu	Leu	Ala	Leu	Cys	Pro	Gly	Gly	Pro		
			405						410					415			
Gly	Gly	Leu	Gly	Asp	Pro	Leu	Arg	Ala	Leu	Leu	Leu	Leu	Lys	Ala	Leu		
		420						425					430				
Gln	Gly	Leu	Arg	Val	Glu	Trp	Arg	Gly	Arg	Asp	Pro	Arg	Gly	Pro	Gly		
	435						440					445					
Arg	Ala	Gln	Arg	Ser	Ala	Gly	Ala	Thr	Ala	Ala	Asp	Gly	Pro	Cys	Ala		
	450					455					460						
Leu	Arg	Glu	Leu	Ser	Val	Asp	Leu	Arg	Ala	Glu	Arg	Ser	Val	Leu	Ile		
465					470					475					480		
Pro	Glu	Thr	Tyr	Gln	Ala	Asn	Asn	Cys	Gln	Gly	Val	Cys	Gly	Trp	Pro		
			485						490					495			
Gln	Ser	Asp	Arg	Asn	Pro	Arg	Tyr	Gly	Asn	His	Val	Val	Leu	Leu	Leu		
		500						505					510				
Lys	Met	Gln	Ala	Arg	Gly	Ala	Ala	Leu	Ala	Arg	Pro	Pro	Cys	Cys	Val		
	515					520						525					
Pro	Thr	Ala	Tyr	Ala	Gly	Lys	Leu	Leu	Ile	Ser	Leu	Ser	Glu	Glu	Arg		

530		535		540
Ile Ser Ala His His Val	Pro Asn Met Val	Ala Thr Glu Cys Gly Cys		
545	550	555	560	
Arg				

<210> 24
 <211> 397
 <212> PRT
 <213> HOMO SAPIEN

<400> 24

Pro Met Val Ala Gly Thr Arg Cys Leu Leu Ala Leu Leu Leu Pro Gln	
1 5 10 15	
Val Leu Leu Gly Gly Ala Ala Gly Leu Val Pro Glu Leu Gly Arg Arg	
20 25 30	
Lys Phe Ala Ala Ser Ser Gly Arg Pro Ser Ser Gln Pro Ser Asp	
35 40 45	
Glu Val Leu Ser Glu Phe Glu Leu Arg Leu Leu Ser Met Phe Gly Leu	
50 55 60	
Lys Gln Arg Pro Thr Pro Ser Arg Asp Ala Val Val Pro Pro Tyr Met	
65 70 75 80	
Leu Asp Leu Tyr Arg Arg His Ser Gly Gln Pro Gly Ser Pro Ala Pro	
85 90 95	
Asp His Arg Leu Glu Arg Ala Ala Ser Arg Ala Asn Thr Val Arg Ser	
100 105 110	
Phe His His Glu Glu Ser Leu Glu Glu Leu Pro Glu Thr Ser Gly Lys	
115 120 125	
Thr Thr Arg Arg Phe Phe Phe Asn Leu Ser Ser Ile Pro Thr Glu Glu	
130 135 140	
Phe Ile Thr Ser Ala Glu Leu Gln Val Phe Arg Glu Gln Met Gln Asp	
145 150 155 160	
Ala Leu Gly Asn Asn Ser Ser Phe His His Arg Ile Asn Ile Tyr Glu	
165 170 175	
Ile Ile Lys Pro Ala Thr Ala Asn Ser Lys Phe Pro Val Thr Arg Leu	
180 185 190	
Leu Asp Thr Arg Leu Val Asn Gln Asn Ala Ser Arg Trp Glu Ser Phe	
195 200 205	
Asp Val Thr Pro Ala Val Met Arg Trp Thr Ala Gln Gly His Ala Asn	
210 215 220	
His Gly Phe Val Val Glu Val Ala His Leu Glu Glu Lys Gln Gly Val	
225 230 235 240	
Ser Lys Arg His Val Arg Ile Ser Arg Ser Leu His Gln Asp Glu His	
245 250 255	
Ser Trp Ser Gln Ile Arg Pro Leu Leu Val Thr Phe Gly His Asp Gly	
260 265 270	
Lys Gly His Pro Leu His Lys Arg Glu Lys Arg Gln Ala Lys His Lys	
275 280 285	
Gln Arg Lys Arg Leu Lys Ser Ser Cys Lys Arg His Pro Leu Tyr Val	
290 295 300	
Asp Phe Ser Asp Val Gly Trp Asn Asp Trp Ile Val Ala Pro Pro Gly	
305 310 315 320	
Tyr His Ala Phe Tyr Cys His Gly Glu Cys Pro Phe Pro Leu Ala Asp	
325 330 335	
His Leu Asn Ser Thr Asn His Ala Ile Val Gln Thr Leu Val Asn Ser	
340 345 350	

Val	Asn	Ser	Lys	Ile	Pro	Lys	Ala	Cys	Cys	Val	Pro	Thr	Glu	Leu	Ser
	355						360					365			
Ala	Ile	Ser	Met	Leu	Tyr	Leu	Asp	Glu	Asn	Glu	Lys	Val	Val	Leu	Lys
	370					375					380				
Asn	Tyr	Gln	Asp	Met	Val	Val	Glu	Gly	Cys	Gly	Cys	Arg			
385					390					395					

<210> 25
 <211> 473
 <212> PRT
 <213> HOMO SAPIEN

<400> 25															
Pro	Met	Ala	Gly	Ala	Ser	Arg	Leu	Leu	Phe	Leu	Trp	Leu	Gly	Cys	Phe
1			5						10					15	
Cys	Val	Ser	Leu	Ala	Gln	Gly	Glu	Arg	Pro	Lys	Pro	Pro	Phe	Pro	Glu
			20					25					30		
Leu	Arg	Lys	Ala	Val	Pro	Gly	Asp	Arg	Thr	Ala	Gly	Gly	Gly	Pro	Asp
		35					40					45			
Ser	Glu	Leu	Gln	Pro	Gln	Asp	Lys	Val	Ser	Glu	His	Met	Leu	Arg	Leu
	50					55					60				
Tyr	Asp	Arg	Tyr	Ser	Thr	Val	Gln	Ala	Ala	Arg	Thr	Pro	Gly	Ser	Leu
65					70					75					80
Glu	Gly	Gly	Ser	Gln	Pro	Trp	Arg	Pro	Arg	Leu	Leu	Arg	Glu	Gly	Asn
				85					90					95	
Thr	Val	Arg	Ser	Phe	Arg	Ala	Ala	Ala	Ala	Glu	Thr	Leu	Glu	Arg	Lys
			100				105						110		
Gly	Leu	Tyr	Ile	Phe	Asn	Leu	Thr	Ser	Leu	Thr	Lys	Ser	Glu	Asn	Ile
		115					120					125			
Leu	Ser	Ala	Thr	Leu	Tyr	Phe	Cys	Ile	Gly	Glu	Leu	Gly	Asn	Ile	Ser
		130				135					140				
Leu	Ser	Cys	Pro	Val	Ser	Gly	Gly	Cys	Ser	His	His	Ala	Gln	Arg	Lys
145					150					155					160
His	Ile	Gln	Ile	Asp	Leu	Ser	Ala	Trp	Thr	Leu	Lys	Phe	Ser	Arg	Asn
			165						170					175	
Gln	Ser	Gln	Leu	Leu	Gly	His	Leu	Ser	Val	Asp	Met	Ala	Lys	Ser	His
			180					185					190		
Arg	Asp	Ile	Met	Ser	Trp	Leu	Ser	Lys	Asp	Ile	Thr	Gln	Phe	Leu	Arg
		195					200					205			
Lys	Ala	Lys	Glu	Asn	Glu	Glu	Phe	Leu	Ile	Gly	Phe	Asn	Ile	Thr	Ser
	210					215					220				
Lys	Gly	Arg	Gln	Leu	Pro	Lys	Arg	Arg	Leu	Pro	Phe	Pro	Glu	Pro	Tyr
225					230					235					240
Ile	Leu	Val	Tyr	Ala	Asn	Asp	Ala	Ala	Ile	Ser	Glu	Pro	Glu	Ser	Val
			245						250					255	
Val	Ser	Ser	Leu	Gln	Gly	His	Arg	Asn	Phe	Pro	Thr	Gly	Thr	Val	Pro
			260					265					270		
Lys	Trp	Asp	Ser	His	Ile	Arg	Ala	Ala	Leu	Ser	Ile	Glu	Arg	Arg	Lys
		275					280					285			
Lys	Arg	Ser	Thr	Gly	Val	Leu	Leu	Pro	Leu	Gln	Asn	Asn	Glu	Leu	Pro
		290				295					300				
Gly	Ala	Glu	Tyr	Gln	Tyr	Lys	Lys	Asp	Glu	Val	Trp	Glu	Glu	Arg	Lys
305					310					315					320
Pro	Tyr	Lys	Thr	Leu	Gln	Ala	Gln	Ala	Pro	Glu	Lys	Ser	Lys	Asn	Lys
				325					330					335	
Lys	Lys	Gln	Arg	Lys	Gly	Pro	His	Arg	Lys	Ser	Gln	Thr	Leu	Gln	Phe

Pro	Asn	Ser	Val	Ala	Val	Thr	Leu	Gln	Arg	Tyr	Asp	Pro	Phe	Pro	Ala	
			260					265					270			
Gly	Asp	Pro	Glu	Pro	Arg	Ala	Ala	Pro	Asn	Asn	Ser	Ala	Asp	Pro	Arg	
		275					280					285				
Val	Arg	Arg	Ala	Ala	Gln	Ala	Thr	Gly	Pro	Leu	Gln	Asp	Asn	Glu	Leu	
	290					295					300					
Pro	Gly	Leu	Asp	Glu	Arg	Pro	Pro	Arg	Ala	His	Ala	Gln	His	Phe	His	
305					310					315					320	
Lys	His	Gln	Leu	Trp	Pro	Ser	Pro	Phe	Arg	Ala	Leu	Lys	Pro	Arg	Pro	
				325					330					335		
Gly	Arg	Lys	Asp	Arg	Arg	Lys	Lys	Gly	Gln	Glu	Val	Phe	Met	Ala	Ala	
			340					345					350			
Ser	Gln	Val	Leu	Asp	Phe	Asp	Glu	Lys	Thr	Met	Gln	Lys	Ala	Arg	Arg	
		355					360					365				
Lys	Gln	Trp	Asp	Glu	Pro	Arg	Val	Cys	Ser	Arg	Arg	Tyr	Leu	Lys	Val	
	370					375					380					
Asp	Phe	Ala	Asp	Ile	Gly	Trp	Asn	Glu	Trp	Ile	Ile	Ser	Pro	Lys	Ser	
385					390					395					400	
Phe	Asp	Ala	Tyr	Tyr	Cys	Ala	Gly	Ala	Cys	Glu	Phe	Pro	Met	Pro	Lys	
			405					410						415		
Ile	Val	Arg	Pro	Ser	Asn	His	Ala	Thr	Ile	Gln	Ser	Ile	Val	Arg	Ala	
			420					425						430		
Val	Gly	Ile	Ile	Pro	Gly	Ile	Pro	Glu	Pro	Cys	Cys	Val	Pro	Asp	Lys	
		435					440					445				
Met	Asn	Ser	Leu	Gly	Val	Leu	Phe	Leu	Asp	Glu	Asn	Arg	Asn	Val	Val	
	450					455					460					
Leu	Lys	Val	Tyr	Pro	Asn	Met	Ser	Val	Asp	Thr	Cys	Ala	Cys	Arg		
465					470					475						

<210> 27
 <211> 409
 <212> PRT
 <213> HOMO SAPIEN

<400> 27

Pro	Met	Ile	Pro	Gly	Asn	Arg	Met	Leu	Met	Val	Val	Leu	Leu	Cys	Gln	
1				5				10						15		
Val	Leu	Leu	Gly	Gly	Ala	Ser	His	Ala	Ser	Leu	Ile	Pro	Glu	Thr	Gly	
			20					25					30			
Lys	Lys	Lys	Val	Ala	Glu	Ile	Gln	Gly	His	Ala	Gly	Gly	Arg	Arg	Ser	
		35					40					45				
Gly	Gln	Ser	His	Glu	Leu	Leu	Arg	Asp	Phe	Glu	Ala	Thr	Leu	Leu	Gln	
	50					55				60						
Met	Phe	Gly	Leu	Arg	Arg	Arg	Pro	Gln	Pro	Ser	Lys	Ser	Ala	Val	Ile	
65				70						75					80	
Pro	Asp	Tyr	Met	Arg	Asp	Leu	Tyr	Arg	Leu	Gln	Ser	Gly	Glu	Glu	Glu	
			85					90						95		
Glu	Glu	Gln	Ile	His	Ser	Thr	Gly	Leu	Glu	Tyr	Pro	Glu	Arg	Pro	Ala	
		100						105					110			
Ser	Arg	Ala	Asn	Thr	Val	Arg	Ser	Phe	His	His	Glu	Glu	His	Leu	Glu	
		115					120					125				
Asn	Ile	Pro	Gly	Thr	Ser	Glu	Asn	Ser	Ala	Phe	Arg	Phe	Leu	Phe	Asn	
	130					135					140					
Leu	Ser	Ser	Ile	Pro	Glu	Asn	Glu	Ala	Ile	Ser	Ser	Ala	Glu	Leu	Arg	
145					150					155					160	
Leu	Phe	Arg	Glu	Gln	Val	Asp	Gln	Gly	Pro	Asp	Trp	Glu	Arg	Gly	Phe	

Ser	Leu	His	Asp	Thr	Asn	Phe	Leu	Asn	Asp	Ala	Asp	Met	Val	Met	Ser
145					150					155					160
Phe	Val	Asn	Leu	Val	Glu	Arg	Asp	Lys	Asp	Phe	Ser	His	Gln	Arg	Arg
				165					170						175
His	Tyr	Lys	Glu	Phe	Arg	Phe	Asp	Leu	Thr	Gln	Ile	Pro	His	Gly	Glu
			180					185					190		
Ala	Val	Thr	Ala	Ala	Glu	Phe	Arg	Ile	Tyr	Lys	Asp	Arg	Ser	Asn	Asn
		195					200					205			
Arg	Phe	Glu	Asn	Glu	Thr	Ile	Lys	Ile	Ser	Ile	Tyr	Gln	Ile	Ile	Lys
	210					215					220				
Glu	Tyr	Thr	Asn	Arg	Asp	Ala	Asp	Leu	Phe	Leu	Leu	Asp	Thr	Arg	Lys
225					230					235					240
Ala	Gln	Ala	Leu	Asp	Val	Gly	Trp	Leu	Val	Phe	Asp	Ile	Thr	Val	Thr
				245					250					255	
Ser	Asn	His	Trp	Val	Ile	Asn	Pro	Gln	Asn	Asn	Leu	Gly	Leu	Gln	Leu
			260					265					270		
Cys	Ala	Glu	Thr	Gly	Asp	Gly	Arg	Ser	Ile	Asn	Val	Lys	Ser	Ala	Gly
		275					280					285			
Leu	Val	Gly	Arg	Gln	Gly	Pro	Gln	Ser	Lys	Gln	Pro	Phe	Met	Val	Ala
	290					295					300				
Phe	Phe	Lys	Ala	Ser	Glu	Val	Leu	Leu	Arg	Ser	Val	Arg	Ala	Ala	Asn
305					310					315					320
Lys	Arg	Lys	Asn	Gln	Asn	Arg	Asn	Lys	Ser	Ser	Ser	His	Gln	Asp	Ser
				325					330					335	
Ser	Arg	Met	Ser	Ser	Val	Gly	Asp	Tyr	Asn	Thr	Ser	Glu	Gln	Lys	Gln
			340					345					350		
Ala	Cys	Lys	Lys	His	Glu	Leu	Tyr	Val	Ser	Phe	Arg	Asp	Leu	Gly	Trp
		355					360					365			
Gln	Asp	Trp	Ile	Ile	Ala	Pro	Glu	Gly	Tyr	Ala	Ala	Phe	Tyr	Cys	Asp
	370					375					380				
Gly	Glu	Cys	Ser	Phe	Pro	Leu	Asn	Ala	His	Met	Asn	Ala	Thr	Asn	His
385					390					395					400
Ala	Ile	Val	Gln	Thr	Leu	Val	His	Leu	Met	Phe	Pro	Asp	His	Val	Pro
				405					410					415	
Lys	Pro	Cys	Cys	Ala	Pro	Thr	Lys	Leu	Asn	Ala	Ile	Ser	Val	Leu	Tyr
				420				425					430		
Phe	Asp	Asp	Ser	Ser	Asn	Val	Ile	Leu	Lys	Lys	Tyr	Arg	Asn	Met	Val
		435					440					445			
Val	Arg	Ser	Cys	Gly	Cys	His									
	450					455									

<210> 29
 <211> 112
 <212> PRT
 <213> HOMO SAPIEN

<400> 29
 Pro Ser Ser Ala Ser Asp Tyr Asn Ser Ser Glu Leu Lys Thr Ala Cys
 1 5 10 15
 Arg Lys His Glu Leu Tyr Val Ser Phe Gln Asp Leu Gly Trp Gln Trp
 20 25 30
 Ile Ile Ala Pro Lys Gly Tyr Ala Ala Asn Tyr Cys Asp Gly Glu Cys
 35 40 45
 Ser Pro Pro Leu Asn His Thr Ala Asn His Ala Ile Val Gln Thr Leu
 50 55 60
 Val His Leu Met Asn Pro Glu Tyr Val Pro Lys Pro Cys Cys Ala Pro

65		70		75		80									
Thr	Lys	Leu	Asn	Ala	Ile	Ser	Val	Leu	Tyr	Phe	Asp	Asp	Asn	Ser	Asn
		85						90						95	
Val	Ile	Lys	Lys	Tyr	Arg	Asn	Met	Val	Val	Arg	Ala	Cys	Gly	Cys	His
		100						105					110		

<210> 30
 <211> 112
 <212> PRT
 <213> HOMO SAPIEN

<400> 30
Pro Ala Asn Val Ala Glu Asn Ser Ser Ser Asp Gln Arg Gln Ala Cys
1 5 10 15
Lys Lys His Glu Leu Tyr Val Ser Phe Arg Asp Leu Gly Trp Gln Trp
20 25 30
Ile Ile Ala Pro Glu Gly Tyr Ala Ala Tyr Tyr Cys Glu Gly Glu Cys
35 40 45
Ala Phe Pro Leu Asn Ser Ala Thr Asn His Ala Ile Val Gln Thr Leu
50 55 60
Val His Phe Ile Asn Pro Glu Thr Val Pro Lys Pro Cys Cys Ala Pro
65 70 75 80
Thr Gln Leu Asn Ala Ile Ser Val Leu Tyr Phe Asp Asp Ser Ser Asn
85 90 95
Val Ile Lys Lys Tyr Arg Asn Met Val Val Arg Ala Cys Gly Cys His
100 105 110

<210> 31
 <211> 403
 <212> PRT
 <213> HOMO SAPIEN

<400> 31
Pro Met Thr Ala Leu Pro Gly Pro Leu Trp Leu Leu Gly Leu Ala Leu
1 5 10 15
Cys Ala Leu Gly Gly Gly Gly Pro Gly Leu Arg Pro Pro Pro Gly Cys
20 25 30
Pro Gln Arg Arg Leu Gly Ala Arg Glu Arg Arg Asp Val Gln Arg Glu
35 40 45
Ile Leu Ala Val Leu Gly Leu Pro Gly Arg Pro Arg Pro Arg Ala Pro
50 55 60
Pro Ala Ala Ser Arg Leu Pro Ala Ser Ala Pro Leu Phe Met Leu Asp
65 70 75 80
Leu Tyr His Ala Met Ala Gly Asp Asp Asp Glu Asp Gly Ala Pro Ala
85 90 95
Glu Arg Arg Leu Gly Arg Ala Asp Leu Val Met Ser Phe Val Asn Met
100 105 110
Val Glu Arg Asp Arg Ala Leu Gly His Gln Glu Pro His Trp Lys Glu
115 120 125
Phe Arg Phe Asp Leu Thr Gln Ile Pro Ala Gly Glu Ala Val Thr Ala
130 135 140
Ala Glu Phe Arg Ile Tyr Lys Val Pro Ser Ile His Leu Leu Asn Arg
145 150 155 160
Thr Leu His Val Ser Met Phe Gln Val Val Gln Glu Gln Ser Asn Arg
165 170 175

Glu	Ser	Asp	Leu	Phe	Phe	Leu	Asp	Leu	Gln	Thr	Leu	Arg	Ala	Gly	Asp
			180					185					190		
Glu	Gly	Trp	Leu	Val	Leu	Asp	Val	Thr	Ala	Ala	Ser	Asp	Cys	Trp	Leu
		195					200					205			
Leu	Lys	Arg	His	Lys	Asp	Leu	Gly	Leu	Arg	Leu	Tyr	Val	Glu	Thr	Glu
	210					215					220				
Asp	Gly	His	Ser	Val	Asp	Pro	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Gln	Arg
225					230					235					240
Ala	Pro	Arg	Ser	Gln	Gln	Pro	Phe	Val	Val	Thr	Phe	Phe	Arg	Ala	Ser
				245					250					255	
Pro	Ser	Pro	Ile	Arg	Thr	Pro	Arg	Ala	Val	Arg	Pro	Leu	Arg	Arg	Arg
			260					265					270		
Gln	Pro	Lys	Lys	Ser	Asn	Glu	Leu	Pro	Gln	Ala	Asn	Arg	Leu	Pro	Gly
		275					280					285			
Ile	Phe	Asp	Asp	Val	His	Gly	Ser	His	Gly	Arg	Gln	Val	Cys	Arg	Arg
	290					295					300				
His	Glu	Leu	Tyr	Val	Ser	Phe	Gln	Asp	Leu	Gly	Trp	Leu	Asp	Trp	Val
305					310					315					320
Ile	Ala	Pro	Gln	Gly	Tyr	Ser	Ala	Tyr	Tyr	Cys	Glu	Gly	Glu	Cys	Ser
			325						330					335	
Phe	Pro	Leu	Asp	Ser	Cys	Met	Asn	Ala	Thr	Asn	His	Ala	Ile	Leu	Gln
			340					345					350		
Ser	Leu	Val	His	Leu	Met	Lys	Pro	Asn	Ala	Val	Pro	Lys	Ala	Cys	Cys
		355					360					365			
Ala	Pro	Thr	Lys	Leu	Ser	Ala	Thr	Ser	Val	Leu	Tyr	Tyr	Asp	Ser	Ser
	370					375					380				
Asn	Asn	Val	Ile	Leu	Arg	Lys	His	Arg	Asn	Met	Val	Val	Lys	Ala	Cys
385					390					395					400
Gly	Cys	His													

<210> 32
 <211> 425
 <212> PRT
 <213> HOMO SAPIEN

<400> 32

Pro	Met	Gly	Ser	Leu	Val	Leu	Thr	Leu	Cys	Ala	Leu	Phe	Cys	Leu	Ala
1				5					10					15	
Ala	Tyr	Leu	Val	Ser	Gly	Ser	Pro	Ile	Met	Asn	Leu	Glu	Gln	Ser	Pro
		20						25					30		
Leu	Glu	Glu	Asp	Met	Ser	Leu	Phe	Gly	Asp	Val	Phe	Ser	Glu	Gln	Asp
		35					40					45			
Gly	Val	Asp	Phe	Asn	Thr	Leu	Leu	Gln	Ser	Met	Lys	Asp	Glu	Phe	Leu
	50					55					60				
Lys	Thr	Leu	Asn	Leu	Ser	Asp	Ile	Pro	Thr	Gln	Asp	Ser	Ala	Lys	Val
65					70					75					80
Asp	Pro	Pro	Glu	Tyr	Met	Leu	Glu	Leu	Tyr	Asn	Lys	Phe	Ala	Thr	Asp
			85						90					95	
Arg	Thr	Ser	Met	Pro	Ser	Ala	Asn	Ile	Ile	Arg	Ser	Phe	Lys	Asn	Glu
			100					105					110		
Asp	Leu	Phe	Ser	Gln	Pro	Val	Ser	Phe	Asn	Gly	Leu	Arg	Lys	Tyr	Pro
		115					120					125			
Leu	Leu	Phe	Asn	Val	Ser	Ile	Pro	His	His	Glu	Glu	Val	Ile	Met	Ala
	130					135					140				
Glu	Leu	Arg	Leu	Tyr	Thr	Leu	Val	Gln	Arg	Asp	Arg	Met	Ile	Tyr	Asp

145					150					155				160
Gly	Val	Asp	Arg	Lys	Ile	Thr	Ile	Phe	Glu	Val	Leu	Glu	Ser	Lys
				165					170					175
Asp	Asn	Glu	Gly	Glu	Arg	Asn	Met	Leu	Val	Leu	Val	Ser	Gly	Glu
			180					185					190	
Tyr	Gly	Thr	Asn	Ser	Glu	Trp	Glu	Thr	Phe	Asp	Val	Thr	Asp	Ala
		195					200					205		
Arg	Arg	Trp	Gln	Lys	Ser	Gly	Ser	Ser	Thr	His	Gln	Leu	Glu	Val
	210					215				220				
Ile	Glu	Ser	Lys	His	Asp	Glu	Ala	Glu	Asp	Ala	Ser	Ser	Gly	Arg
225					230				235					240
Glu	Ile	Asp	Thr	Ser	Ala	Gln	Asn	Lys	His	Asn	Pro	Leu	Leu	Ile
			245						250					255
Phe	Ser	Asp	Asp	Gln	Ser	Ser	Asp	Lys	Glu	Arg	Lys	Glu	Glu	Leu
		260						265					270	
Glu	Met	Ile	Ser	His	Glu	Gln	Leu	Pro	Glu	Leu	Asp	Asn	Leu	Gly
	275						280					285		
Asp	Ser	Phe	Ser	Ser	Gly	Pro	Gly	Glu	Glu	Ala	Leu	Leu	Gln	Met
	290					295					300			
Ser	Asn	Ile	Ile	Tyr	Asp	Ser	Thr	Ala	Arg	Ile	Arg	Arg	Asn	Ala
305					310				315					320
Gly	Asn	Tyr	Cys	Lys	Arg	Thr	Pro	Leu	Tyr	Ile	Asp	Phe	Lys	Glu
			325						330					335
Gly	Trp	Asp	Ser	Trp	Ile	Ile	Ala	Pro	Pro	Gly	Tyr	Glu	Ala	Tyr
			340				345						350	
Cys	Arg	Gly	Val	Cys	Asn	Tyr	Pro	Leu	Ala	Glu	His	Leu	Thr	Pro
	355						360					365		
Lys	His	Ala	Ile	Ile	Gln	Ala	Leu	Val	His	Leu	Lys	Asn	Ser	Gln
	370				375					380				
Ala	Ser	Lys	Ala	Cys	Cys	Val	Pro	Thr	Lys	Leu	Glu	Pro	Ile	Ser
385					390					395				400
Leu	Tyr	Leu	Asp	Lys	Gly	Val	Val	Thr	Tyr	Lys	Phe	Lys	Tyr	Glu
			405					410						415
Met	Ala	Val	Ser	Glu	Cys	Gly	Cys	Arg						
		420						425						

<210> 33
 <211> 408
 <212> PRT
 <213> HOMO SAPIEN

<400> 33
 Pro Met Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala
 1 5 10 15
 Leu Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala
 20 25 30
 Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg
 35 40 45
 Ser Ser Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro
 50 55 60
 Val Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile
 65 70 75 80
 Lys Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile
 85 90 95
 Ser Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln
 100 105 110

Gln Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu
 115 120 125
 Asp Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile
 130 135 140
 Ser Met Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro
 145 150 155 160
 Leu Cys Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val
 165 170 175
 Leu Lys Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala
 180 185 190
 Thr Val Tyr Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly
 195 200 205
 Thr Ala Gly Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser
 210 215 220
 Leu Lys Ile Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp
 225 230 235 240
 Phe Lys Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp
 245 250 255
 Gly Ile Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val
 260 265 270
 Thr Ser Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu
 275 280 285
 Arg Val Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp
 290 295 300
 Cys Asp Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr
 305 310 315 320
 Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg
 325 330 335
 Tyr Lys Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln
 340 345 350
 Lys Tyr Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser
 355 360 365
 Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu
 370 375 380
 Tyr Phe Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met
 385 390 395 400
 Val Val Asp Arg Cys Gly Cys Ser
 405

<210> 34
 <211> 393
 <212> PRT
 <213> HOMO SAPIEN

<400> 34
 Pro Met Val Leu Leu Ser Ile Leu Arg Ile Leu Phe Leu Cys Glu Leu
 1 5 10 15
 Val Leu Phe Met Glu His Arg Ala Gln Met Ala Glu Gly Gly Gln Ser
 20 25 30
 Phe Ile Ala Leu Leu Ala Glu Ala Pro Thr Leu Pro Leu Ile Glu Glu
 35 40 45
 Met Leu Glu Glu Ser Pro Gly Glu Gln Pro Arg Lys Pro Arg Leu Leu
 50 55 60
 Gly His Ser Leu Arg Tyr Met Leu Glu Leu Tyr Arg Arg Ser Ala Asp
 65 70 75 80
 Ser His Gly His Pro Arg Glu Asn Arg Thr Ile Gly Ala Thr Met Val

Arg	Leu	Val	Lys	85	Pro	Leu	Thr	Ser	Val	Ala	Arg	Pro	His	Arg	Gly	Thr	95
			100						105						110		
Trp	His	Ile	Gln	Ile	Leu	Gly	Phe	Pro	Leu	Arg	Pro	Asn	Arg	Gly	Leu		
		115					120						125				
Tyr	Gln	Leu	Val	Arg	Ala	Thr	Val	Val	Tyr	Arg	His	His	Leu	Gln	Leu		
	130					135					140						
Thr	Arg	Phe	Asn	Leu	Ser	Cys	His	Val	Glu	Pro	Trp	Val	Gln	Lys	Asn		
145					150					155					160		
Pro	Thr	Asn	His	Phe	Pro	Ser	Ser	Glu	Gly	Asp	Ser	Ser	Lys	Pro	Ser		
			165						170					175			
Leu	Met	Ser	Asn	Ala	Trp	Lys	Glu	Met	Asp	Ile	Thr	Gln	Leu	Val	Gln		
		180						185					190				
Gln	Arg	Phe	Trp	Asn	Asn	Lys	Gly	His	Arg	Ile	Leu	Arg	Leu	Arg	Phe		
	195						200					205					
Met	Cys	Gln	Gln	Gln	Lys	Asp	Ser	Gly	Gly	Leu	Glu	Leu	Trp	His	Gly		
	210				215						220						
Thr	Ser	Ser	Leu	Asp	Ile	Ala	Phe	Leu	Leu	Leu	Tyr	Phe	Asn	Asp	Thr		
225				230						235					240		
His	Lys	Ser	Ile	Arg	Lys	Ala	Lys	Phe	Leu	Pro	Arg	Gly	Met	Glu	Glu		
			245						250					255			
Phe	Met	Glu	Arg	Glu	Ser	Leu	Leu	Arg	Arg	Thr	Arg	Gln	Ala	Asp	Gly		
		260						265					270				
Ile	Ser	Ala	Glu	Val	Thr	Ala	Ser	Ser	Ser	Lys	His	Ser	Gly	Pro	Glu		
	275						280					285					
Asn	Asn	Gln	Cys	Ser	Leu	His	Pro	Phe	Gln	Ile	Ser	Phe	Arg	Gln	Leu		
	290				295					300							
Gly	Trp	Asp	His	Trp	Ile	Ile	Ala	Pro	Pro	Phe	Tyr	Thr	Pro	Asn	Tyr		
305					310					315					320		
Cys	Lys	Gly	Thr	Cys	Leu	Arg	Val	Leu	Arg	Asp	Gly	Leu	Asn	Ser	Pro		
			325						330					335			
Asn	His	Ala	Ile	Ile	Gln	Asn	Leu	Ile	Asn	Gln	Leu	Val	Asp	Gln	Ser		
		340					345						350				
Val	Pro	Arg	Pro	Ser	Cys	Val	Pro	Tyr	Lys	Tyr	Val	Pro	Ile	Ser	Val		
	355					360						365					
Leu	Met	Ile	Glu	Ala	Asn	Gly	Ser	Ile	Leu	Tyr	Lys	Glu	Tyr	Glu	Gly		
	370				375						380						
Met	Ile	Ala	Glu	Ser	Cys	Thr	Cys	Arg									
385					390												

<210> 35
 <211> 134
 <212> PRT
 <213> HOMO SAPIEN

<400> 35
 Pro Met Arg Lys His Val Leu Ala Ala Ser Phe Ser Met Leu Ser Leu
 1 5 10 15
 Leu Val Ile Met Gly Asp Thr Asp Ser Lys Thr Asp Ser Ser Phe Ile
 20 25 30
 Met Asp Ser Asp Pro Arg Arg Cys Met Arg His His Tyr Val Asp Ser
 35 40 45
 Ile Ser His Pro Leu Tyr Lys Cys Ser Ser Lys Met Val Leu Leu Ala
 50 55 60
 Arg Cys Glu Gly His Cys Ser Gln Ala Ser Arg Ser Glu Pro Leu Val
 65 70 75 80

Ser	Phe	Ser	Thr	Val	Leu	Lys	Gln	Pro	Phe	Arg	Ser	Ser	Cys	His	Cys
				85					90					95	
Cys	Arg	Pro	Gln	Thr	Ser	Lys	Leu	Lys	Ala	Leu	Arg	Leu	Arg	Cys	Ser
			100					105					110		
Gly	Gly	Met	Arg	Leu	Thr	Ala	Thr	Tyr	Arg	Tyr	Ile	Leu	Ser	Cys	His
		115					120					125			
Cys	Glu	Glu	Cys	Asn	Ser										
	130														

<210> 36
 <211> 373
 <212> PRT
 <213> HOMO SAPIEN

<400> 36

Pro	Met	Pro	Pro	Pro	Gln	Gln	Gly	Pro	Cys	Gly	His	His	Leu	Leu	Leu
1				5					10					15	
Leu	Leu	Ala	Leu	Leu	Leu	Pro	Ser	Leu	Pro	Leu	Thr	Arg	Ala	Pro	Val
			20					25					30		
Pro	Pro	Gly	Pro	Ala	Ala	Ala	Leu	Leu	Gln	Ala	Leu	Gly	Leu	Arg	Asp
		35					40					45			
Glu	Pro	Gln	Gly	Ala	Pro	Arg	Leu	Arg	Pro	Val	Pro	Pro	Val	Met	Trp
	50					55					60				
Arg	Leu	Phe	Arg	Arg	Arg	Asp	Pro	Gln	Glu	Thr	Arg	Ser	Gly	Ser	Arg
65					70					75					80
Arg	Thr	Ser	Pro	Gly	Val	Thr	Leu	Gln	Pro	Cys	His	Val	Glu	Glu	Leu
				85				90						95	
Gly	Val	Ala	Gly	Asn	Ile	Val	Arg	His	Ile	Pro	Asp	Arg	Gly	Ala	Pro
			100					105					110		
Thr	Arg	Ala	Ser	Glu	Pro	Val	Ser	Ala	Ala	Gly	His	Cys	Pro	Glu	Trp
		115				120						125			
Thr	Val	Val	Phe	Asp	Leu	Ser	Ala	Val	Glu	Pro	Ala	Glu	Arg	Pro	Ser
	130					135					140				
Arg	Ala	Arg	Leu	Glu	Leu	Arg	Phe	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Pro
145					150					155					160
Glu	Gly	Gly	Trp	Glu	Leu	Ser	Val	Ala	Gln	Ala	Gly	Gln	Gly	Ala	Gly
				165					170					175	
Ala	Asp	Pro	Gly	Pro	Val	Leu	Leu	Arg	Gln	Leu	Val	Pro	Ala	Leu	Gly
		180						185					190		
Pro	Pro	Val	Arg	Ala	Glu	Leu	Leu	Gly	Ala	Ala	Trp	Ala	Arg	Asn	Ala
		195					200						205		
Ser	Trp	Pro	Arg	Ser	Leu	Arg	Leu	Ala	Leu	Ala	Leu	Arg	Pro	Arg	Ala
	210					215					220				
Pro	Ala	Ala	Cys	Ala	Arg	Leu	Ala	Glu	Ala	Ser	Leu	Leu	Leu	Val	Thr
225					230					235					240
Leu	Asp	Pro	Arg	Leu	Cys	His	Pro	Leu	Ala	Arg	Pro	Arg	Arg	Asp	Ala
				245					250					255	
Glu	Pro	Val	Leu	Gly	Gly	Gly	Pro	Gly	Gly	Ala	Cys	Arg	Ala	Arg	Arg
			260					265					270		
Leu	Tyr	Val	Ser	Phe	Arg	Glu	Val	Gly	Trp	His	Arg	Trp	Val	Ile	Ala
		275					280					285			
Pro	Arg	Gly	Phe	Leu	Ala	Asn	Tyr	Cys	Gln	Gly	Gln	Cys	Ala	Leu	Pro
	290					295					300				
Val	Ala	Leu	Ser	Gly	Ser	Gly	Gly	Pro	Pro	Ala	Leu	Asn	His	Ala	Val
305					310					315					320
Leu	Arg	Ala	Leu	Met	His	Ala	Ala	Ala	Pro	Gly	Ala	Ala	Asp	Leu	Pro

				325						330					335				
Cys	Cys	Val	Pro	Ala	Arg	Leu	Ser	Pro	Ile	Ser	Val	Leu	Phe	Phe	Asp				
			340					345					350						
Asn	Ser	Asp	Asn	Val	Val	Leu	Arg	Gln	Tyr	Glu	Asp	Met	Val	Val	Asp				
		355					360					365							
Glu	Cys	Gly	Cys	Arg															
	370																		

<210> 37
 <211> 502
 <212> PRT
 <213> HOMO SAPIEN

<400> 37

Pro	Met	Arg	Leu	Pro	Lys	Leu	Leu	Thr	Phe	Leu	Leu	Trp	Tyr	Leu	Ala				
1				5					10					15					
Trp	Leu	Asp	Leu	Glu	Phe	Ile	Cys	Thr	Val	Leu	Gly	Ala	Pro	Asp	Leu				
		20						25					30						
Gly	Gln	Arg	Pro	Gln	Gly	Ser	Arg	Pro	Gly	Leu	Ala	Lys	Ala	Glu	Ala				
		35					40					45							
Lys	Glu	Arg	Pro	Pro	Leu	Ala	Arg	Asn	Val	Phe	Arg	Pro	Gly	Gly	His				
	50					55					60								
Ser	Tyr	Gly	Gly	Gly	Ala	Thr	Asn	Ala	Asn	Ala	Arg	Ala	Lys	Gly	Gly				
65					70				75						80				
Thr	Gly	Gln	Thr	Gly	Gly	Leu	Thr	Gln	Pro	Lys	Lys	Asp	Glu	Pro	Lys				
			85					90						95					
Lys	Leu	Pro	Pro	Arg	Pro	Gly	Gly	Pro	Glu	Pro	Lys	Pro	Gly	His	Pro				
		100						105					110						
Pro	Gln	Thr	Arg	Gln	Ala	Thr	Ala	Arg	Thr	Val	Thr	Pro	Lys	Gly	Gln				
		115					120					125							
Leu	Pro	Gly	Gly	Lys	Ala	Pro	Pro	Lys	Ala	Gly	Ser	Val	Pro	Ser	Ser				
	130					135					140								
Phe	Leu	Leu	Lys	Lys	Ala	Arg	Glu	Pro	Gly	Pro	Pro	Arg	Glu	Pro	Lys				
145					150					155					160				
Glu	Pro	Phe	Arg	Pro	Pro	Pro	Ile	Thr	Pro	His	Glu	Tyr	Met	Leu	Ser				
				165					170					175					
Leu	Tyr	Arg	Thr	Leu	Ser	Asp	Ala	Asp	Arg	Lys	Gly	Gly	Asn	Ser	Ser				
		180						185					190						
Val	Lys	Leu	Glu	Ala	Gly	Leu	Ala	Asn	Thr	Ile	Thr	Ser	Phe	Ile	Asp				
	195						200					205							
Lys	Gly	Gln	Asp	Asp	Arg	Gly	Pro	Val	Val	Arg	Lys	Gln	Arg	Tyr	Val				
	210					215					220								
Phe	Asp	Ile	Ser	Ala	Leu	Glu	Lys	Asp	Gly	Leu	Leu	Gly	Ala	Glu	Leu				
225					230					235					240				
Arg	Ile	Leu	Arg	Lys	Lys	Pro	Ser	Asp	Thr	Ala	Lys	Pro	Ala	Val	Pro				
				245					250					255					
Arg	Ser	Arg	Arg	Ala	Ala	Gln	Leu	Lys	Leu	Ser	Ser	Cys	Pro	Ser	Gly				
		260						265					270						
Arg	Gln	Pro	Ala	Ala	Leu	Leu	Asp	Val	Arg	Ser	Val	Pro	Gly	Leu	Asp				
	275						280					285							
Gly	Ser	Gly	Trp	Glu	Val	Phe	Asp	Ile	Trp	Lys	Leu	Phe	Arg	Asn	Phe				
	290					295					300								
Lys	Asn	Ser	Ala	Gln	Leu	Cys	Leu	Glu	Leu	Glu	Ala	Trp	Glu	Arg	Gly				
305					310					315					320				
Arg	Thr	Val	Asp	Leu	Arg	Gly	Leu	Gly	Phe	Asp	Arg	Ala	Ala	Arg	Gln				
				325					330					335					

Val	His	Glu	Lys	Ala	Leu	Phe	Leu	Val	Phe	Gly	Arg	Thr	Lys	Lys	Arg	340	345	350
Asp	Leu	Phe	Asn	Glu	Ile	Lys	Ala	Arg	Ser	Gly	Gln	Asp	Asp	Lys	355	360	365	
Thr	Val	Tyr	Glu	Tyr	Leu	Phe	Ser	Gln	Arg	Arg	Lys	Arg	Arg	Ala	Pro	370	375	380
Ser	Ala	Thr	Arg	Gln	Gly	Lys	Arg	Pro	Ser	Lys	Asn	Leu	Lys	Ala	Arg	385	390	395
Cys	Ser	Arg	Lys	Ala	Leu	His	Val	Asn	Phe	Lys	Asp	Met	Gly	Trp	Asp	405	410	415
Asp	Trp	Ile	Ile	Ala	Pro	Leu	Glu	Tyr	Glu	Ala	Phe	His	Cys	Glu	Gly	420	425	430
Leu	Cys	Glu	Phe	Pro	Leu	Arg	Ser	His	Leu	Glu	Pro	Thr	Asn	His	Ala	435	440	445
Val	Ile	Gln	Thr	Leu	Met	Asn	Ser	Met	Asp	Pro	Glu	Ser	Thr	Pro	Pro	450	455	460
Thr	Cys	Cys	Val	Pro	Thr	Arg	Leu	Ser	Pro	Ile	Ser	Ile	Leu	Phe	Ile	465	470	475
Asp	Ser	Ala	Asn	Asn	Val	Val	Tyr	Lys	Gln	Tyr	Glu	Asp	Met	Val	Val	485	490	495
Glu	Ser	Cys	Gly	Cys	Arg	500												

<210> 38
 <211> 376
 <212> PRT
 <213> HOMO SAPIEN

<400> 38

Pro	Met	Gln	Lys	Leu	Gln	Leu	Cys	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	1	5	10	15
Ile	Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	20	25	30	
Asn	Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	35	40	45	
Thr	Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	50	55	60	
Leu	Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Val	Ile	Arg	Gln	65	70	75	80
Leu	Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	85	90	95	
Val	Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	100	105	110	
His	Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe	115	120	125	
Leu	Met	Gln	Val	Asp	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	130	135	140	
Ser	Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	145	150	155	160
Leu	Arg	Pro	Val	Glu	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	165	170	175	
Leu	Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	180	185	190	
Leu	Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	195	200	205	
Val	Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu				

210		215		220
Gly Ile Glu Ile Lys Ala	Leu Asp Glu Asn Gly His Asp Leu Ala Val			
225	230	235	240	
Thr Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val				
	245	250	255	
Lys Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp				
	260	265	270	
Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr				
	275	280	285	
Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg				
	290	295	300	
Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln				
305	310	315	320	
Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser				
	325	330	335	
Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu				
	340	345	350	
Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met				
	355	360	365	
Val Val Asp Arg Cys Gly Cys Ser				
370	375			

<210> 39
 <211> 455
 <212> PRT
 <213> HOMO SAPIEN

<400> 39

Pro Met Ala Arg Pro Asn Lys Phe Leu Leu Trp Phe Cys Cys Phe Ala	
1	5
Trp Leu Cys Phe Pro Ile Ser Leu Gly Ser Gln Ala Ser Gly Gly Glu	
	20
Ala Gln Ile Ala Ala Ser Ala Glu Leu Glu Ser Gly Ala Met Pro Trp	
	35
Ser Leu Leu Gln His Ile Asp Glu Arg Asp Arg Ala Gly Leu Leu Pro	
	50
Ala Leu Phe Lys Val Leu Ser Val Gly Arg Gly Gly Ser Pro Arg Leu	
65	70
Gln Pro Asp Ser Arg Ala Leu His Tyr Met Lys Lys Leu Tyr Lys Thr	
	85
Tyr Ala Thr Lys Glu Gly Ile Pro Lys Ser Asn Arg Ser His Leu Tyr	
	100
Asn Thr Val Arg Leu Phe Thr Pro Cys Thr Arg His Lys Gln Ala Pro	
	115
Gly Asp Gln Val Thr Gly Ile Leu Pro Ser Val Glu Leu Leu Phe Asn	
	130
Leu Asp Arg Ile Thr Thr Val Glu His Leu Leu Lys Ser Val Leu Leu	
145	150
Tyr Asn Ile Asn Asn Ser Val Ser Phe Ser Ser Ala Val Lys Cys Val	
	165
Cys Asn Leu Met Ile Lys Glu Pro Lys Ser Ser Ser Arg Thr Leu Gly	
	180
Arg Ala Pro Tyr Ser Phe Thr Phe Asn Ser Gln Phe Glu Phe Gly Lys	
	195
Lys His Lys Trp Ile Gln Ile Asp Val Thr Ser Leu Leu Gln Pro Leu	
210	215
	220

Val	Ala	Ser	Asn	Lys	Arg	Ser	Ile	His	Met	Ser	Ile	Asn	Phe	Thr	Cys
225					230					235					240
Met	Lys	Asp	Gln	Leu	Glu	His	Pro	Ser	Ala	Gln	Asn	Gly	Leu	Phe	Asn
			245						250						255
Met	Thr	Leu	Val	Ser	Pro	Ser	Leu	Ile	Leu	Tyr	Leu	Asn	Asp	Thr	Ser
			260					265						270	
Ala	Gln	Ala	Tyr	His	Ser	Trp	Tyr	Ser	Leu	His	Tyr	Lys	Arg	Arg	Pro
		275					280					285			
Ser	Gln	Gly	Pro	Asp	Gln	Glu	Arg	Ser	Leu	Ser	Ala	Tyr	Pro	Val	Gly
	290					295					300				
Glu	Glu	Ala	Ala	Glu	Asp	Gly	Arg	Ser	Ser	His	His	Arg	His	Arg	Arg
305					310					315					320
Gly	Gln	Glu	Thr	Val	Ser	Ser	Glu	Leu	Lys	Lys	Pro	Leu	Gly	Pro	Ala
				325					330						335
Ser	Phe	Asn	Leu	Ser	Glu	Tyr	Phe	Arg	Gln	Phe	Leu	Leu	Pro	Gln	Asn
			340					345						350	
Glu	Cys	Glu	Leu	His	Asp	Phe	Arg	Leu	Ser	Phe	Ser	Gln	Leu	Lys	Trp
		355					360					365			
Asp	Asn	Trp	Ile	Val	Ala	Pro	His	Arg	Tyr	Asn	Pro	Arg	Tyr	Cys	Lys
	370					375					380				
Gly	Asp	Cys	Pro	Arg	Ala	Val	Gly	His	Arg	Tyr	Gly	Ser	Pro	Val	His
385					390					395					400
Thr	Met	Val	Gln	Asn	Ile	Ile	Tyr	Glu	Lys	Leu	Asp	Ser	Ser	Val	Pro
				405					410						415
Arg	Pro	Ser	Cys	Val	Pro	Ala	Lys	Tyr	Ser	Pro	Leu	Ser	Val	Leu	Thr
			420					425					430		
Ile	Glu	Pro	Asp	Gly	Ser	Ile	Ala	Tyr	Lys	Glu	Tyr	Glu	Asp	Met	Ile
		435					440					445			
Ala	Thr	Lys	Cys	Thr	Cys	Arg									
	450					455									

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 <212> PRT
 <213> HOMO SAPIEN

<400> 40

Pro	Met	Pro	Gly	Leu	Ile	Ser	Ala	Arg	Gly	Gln	Pro	Leu	Leu	Glu	Val
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Leu	Pro	Pro	Gln	Ala	His	Leu	Gly	Ala	Leu	Phe	Leu	Pro	Glu	Ala	Pro
			20					25					30		
Leu	Gly	Leu	Ser	Ala	Gln	Pro	Ala	Leu	Trp	Pro	Thr	Leu	Ala	Ala	Leu
		35					40					45			
Ala	Leu	Leu	Ser	Ser	Val	Ala	Glu	Ala	Ser	Leu	Gly	Ser	Ala	Pro	Arg
	50					55					60				
Ser	Pro	Ala	Pro	Arg	Glu	Gly	Pro	Pro	Pro	Val	Leu	Ala	Ser	Pro	Ala
65				70						75					80
Gly	His	Leu	Pro	Gly	Gly	Arg	Thr	Ala	Arg	Trp	Cys	Ser	Gly	Arg	Ala
			85						90					95	
Arg	Arg	Pro	Pro	Pro	Gln	Pro	Ser	Arg	Pro	Ala	Pro	Pro	Pro	Pro	Ala
			100					105						110	
Pro	Pro	Ser	Ala	Leu	Pro	Arg	Gly	Gly	Arg	Ala	Ala	Arg	Ala	Gly	Gly
		115					120					125			
Pro	Gly	Ser	Arg	Ala	Arg	Ala	Ala	Gly	Ala	Arg	Gly	Cys	Arg	Leu	Arg
	130					135					140				
Ser	Gln	Leu	Val	Pro	Val	Arg	Ala	Leu	Gly	Leu	Gly	His	Arg	Ser	Asp

145		150		155		160									
Glu	Leu	Val	Arg	Phe	Arg	Phe	Cys	Ser	Gly	Ser	Cys	Arg	Arg	Ala	Arg
				165					170					175	
Ser	Pro	His	Asp	Leu	Ser	Leu	Ala	Ser	Leu	Leu	Gly	Ala	Gly	Ala	Leu
			180					185					190		
Arg	Pro	Pro	Pro	Gly	Ser	Arg	Pro	Val	Ser	Gln	Pro	Cys	Cys	Arg	Pro
		195					200				205				
Thr	Arg	Tyr	Glu	Ala	Val	Ser	Phe	Met	Asp	Val	Asn	Ser	Thr	Trp	Arg
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<400> 41
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20 25 30
Ala Asp Gly Glu Phe Ser Ser Glu Gln Val Ala Lys Ala Gly Gly Thr
35 40 45
Trp Leu Gly Thr His Arg Pro Leu Ala Arg Leu Arg Arg Ala Leu Ser
50 55 60
Gly Pro Cys Gln Leu Trp Ser Leu Thr Leu Ser Val Ala Glu Leu Gly
65 70 75 80
Leu Gly Tyr Ala Ser Glu Glu Lys Val Ile Phe Arg Tyr Cys Ala Gly
85 90 95
Ser Cys Pro Arg Gly Ala Arg Thr Gln His Gly Leu Ala Leu Ala Arg
100 105 110
Leu Gln Gly Gln Gly Arg Ala His Gly Gly Pro Cys Cys Arg Pro Thr
115 120 125
Arg Tyr Thr Asp Val Ala Phe Leu Asp Asp Arg His Arg Trp Gln Arg
130 135 140
Leu Pro Gln Leu Ser Ala Ala Ala Cys Gly Cys Gly Gly
145 150 155